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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 16 DEC 2004  
PCT/INT COOPERATION TREATY

Applicant's or agent's file reference OPF0295/PCT	FOR FURTHER ACTION		SeeNotificationofTransmittalofInternationalPreliminary Examination Report (Form PCT/IPEA/416)
International application No. <b>PCT/KR2003/001311</b>	International filing date (day/month/year) <b>03 JULY 2003 (03.07.2003)</b>	Priority date (day/month/year) 22 JULY 2002 (22.07.2002)	

International Patent Classification (IPC) or national classification and IPC

**IPC7 A61N 1/00**

Applicant

**MO, Seung-Kee**

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand

**20 FEBRUARY 2004 (20.02.2004)**

Date of completion of this report

30 NOVEMBER 2004 (30.11.2004)

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/001311

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

 the international application as originally filed the description:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the claims:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the drawings:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the sequence listing part of the description:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

the language of publication of the international application (under Rule 48.3(b)).

the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form

The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4.  The amendments have resulted in the cancellation of:

the description, pages \_\_\_\_\_

the claims, Nos. \_\_\_\_\_

the drawings, sheets \_\_\_\_\_

5.

This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed," and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	12, 13, 16-28	YES
	Claims	1-11, 14, 15	NO
Inventive step (IS)	Claims	12, 13, 16-28	YES
	Claims	1-11, 14, 15	NO
Industrial applicability (IA)	Claims	1-28	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

Reference is made to the following document from the International Search Report (ISR).  
 D1: US 5814093

## I. Novelty

The present invention relates to a stimulating device using electrical signals.

## (a) Regarding claims 1-11, 14 &amp; 15:

The subject matter of claim 1 comprises a main body (non-conductive material), at least two conductive members (electrodes) attached to a surface of the main body and a connecting section for transferring the respective electrical signals to the conductive members.

D1 is considered to represent the most relevant state of the art for the subject matter of present invention concerning the assembly for functional electrical stimulation comprising as follows: electrodes for stimulating, a band-shaped non-conductive plate for conforming with the body part, a conductive connectors, a control unit etc. It appears that D1 is a novelty destroying prior art of claim 1. The additional features described in claims 2-11, 14 & 15, dependent on claim 1, are also contained in D1 and do not contribute to making the subject matter of claim 1 novel. Therefore, claims 1-11, 14 & 15 fail to fulfill the criteria set forth in Article 33(2) PCT.

## (b) Regarding claims 12 &amp; 13:

Claim 12 limits the stimulating device of claim 1 to one having a plurality of grooves formed in the main body, to which each of the conductive members is engaged. This feature is never disclosed in D1 making claim 12 and its dependent claim 13 different from what D1 discloses.

Accordingly, claims 12 & 13 meet the criteria set forth in Article 33(2) PCT.

- Continued in Supplemental Box

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

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**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Contrary to the requirements of Articles 5 & 6 PCT, claim 7 and descriptions are not clear enough for a person skilled in the art to carry out the invention, placing an undue burden on others:

It is recited that a conductive material includes at least any one of silicon, rag, cloth and leather having electrical conductivity. It is clear that silicon has conductivity. However, neither described in the application nor understood is a means for making rag, cloth and leather electrically conductive, which are otherwise known as non-conductive materials.

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**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

Box V

**(c) Regarding claims 16-28:**

The subject matter of claim 16 is a measuring and stimulating device further comprising a control unit that is coupled to the connecting section of claim 1. The control unit is responsible for supplying a test electrical signal to the conductive members, receiving a measured electrical signal corresponding to the test electrical signal, and supplying a body electrical signal corresponding to the measured electrical signal. Neither D1 nor other prior arts in ISR disclose such a control unit, which appears to make the stimulating device novel. Consequently, claim 16 and its dependent claims 17-28 are novel fulfilling the criteria set forth in Article 33(2) PCT.

**II. Inventive step****(a) Regarding claims 1-11, 14 & 15:**

If novelty should be disputed based on some minor difference of interpretation, it is pointed out that the subject matters of claims 1-11, 14 & 15 would in any case not involve an inventive step (Article 33(3) PCT).

**(b) Regarding claims 12 & 13:**

The engagement of the main body and the conductive members through a plurality of grooves is the technical feature of claim 12 & 13. It seems non-obvious to a person skilled in the art to introduce such an engagement to the stimulator of D1. There is no lead in D1 to the said feature, which brings forth a special effect of preventing a burn of the human body from the concentration of current. Therefore, claims 12 & 13 involve an inventive step meeting the criteria set forth in Article 33(3) PCT.

**(c) Regarding claims 16-28:**

The technical feature of the device of claim 16 is the control unit for supplying an electrical signal corresponding to electromyogram of a body part that has been measured in response to the test electrical signal. D1 also features a sensor, but it is a tilt sensor for measuring the angular position of the body part not for measuring an electromyogram. The control unit of claim 16 is neither suggested nor indicated in prior arts including D1. It is non-obvious to a skilled person in the art to adopt the control unit into the stimulator. Therefore, claim 16 involves an inventive step.

Accordingly, claim 16 and its dependent claims 17-28 fulfill the criteria set forth in Article 33(3) PCT.

**III. Industrial applicability**

Objective of the present invention is to provide a stimulating device using electrical signals for a human body. There is no reason to negate the industrial applicability of this invention. Consequently, the claims 1-28 appear to meet the requirements of Article 33(4) PCT.